

Remarks

Claims 1-3 were pending in the application. Claim 1 has been amended to correct minor typographical errors in accordance with the Examiner's suggestion. No new matter has been introduced. Thus, claims 1-3 are re-presented for consideration by the Examiner.

In The Specification

Applicant has further amended the specification to correct minor typographical errors. No new matter has been introduced.

Applicant thanks the Examiner for acknowledging receipt of the priority documents in the pending application.

Claim Rejections under 35 USC § 102

Claim 1 stands rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,365,419 to Durlam et al . ("Durlam"). Applicants respectfully traverse this rejection for at least the following reasons.

While Durlam is directed generally at fabricating an MRAM cell, Durlam fails to disclose or suggest the stacked structure of an MRAM cell as recited in claim 1. Although Durlam discloses forming a metal layer 42 and sequentially forming a pinned magnetic layer, a tunnel barrier layer and a free magnetic layer on the metal layer, Durlam also discloses forming a top metal 48 positioned on the free magnetic layer 46 (Col. 4, ll. 26-30). As a result of forming the top metal layer 48 on the free magnetic layer 46, when etched together with the free magnetic layer 46 a by-product metal polymer is generated. The generation of such by-product metal polymers is what the invention recited in claim 1 seeks to prevent. As such Durlam fails to disclose or suggest the method of fabricating an MRAM cell recited in claim 1 which seeks to

prevent the generation of metal polymer by-products. For at least this reason, Durlam fails to anticipate the presently claimed invention.

Moreover, Durlam fails to disclose or suggest the step of “etching the tunnel barrier layer, the pinned magnetic layer and the metal layer using the insulation film spacer and the hard mask layer as a mask to form a MTJ cell and a connection layer” as recited in claim 1. In contrast to the present invention which utilizes the insulation film spacer and hard mask layer to form a MTJ cell, Durlam discloses using only a hard mask layer 55. According to Durlam, “a blanket hardmask layer 55 is deposited over the entire area of MTJ memory cell 40 on etch stop layer 52. Using standard mask and etch techniques, hardmask layer 55 is formed to overlies or define only a desired portion of MTJ memory cell 40.” Col. 4, ll. 48-52. Durlam fails to disclose or suggest using the insulation film spacer in combination with the hardmask layer to form a MTJ cell. For this additional reason, Durlam fails to anticipate the presently claimed invention.

Withdrawal of the rejection under 35 U.S.C. §102(e) is respectfully requested.

Claim Rejections under 35 USC § 103

Claims 2 and 3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Durlam in view of U.S. Patent No. 6,518,588 to Parkin et al. (“Parkin”). The Examiner correctly states that Durlam fails to disclose “forming a Ta barrier layer and an insulating oxide film.” Office Action, page 4. Accordingly, the Examiner cites Parkin to cure the deficiencies of Durlam recited by the Examiner. Regardless of whether Parkin does or does not cure the stated deficiencies of Durlam (Applicants do believe this to be the case), Parkin fails to cure the deficiencies of Durlam stated above with respect to claim 1. Accordingly, as claims 2 and 3 are dependent upon claim 1, claims 2 and 3 are believed to be allowable for at least the

aforementioned reasons with respect to claim 1 in addition to the further patentable features recited therein. Withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

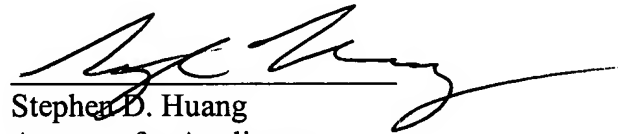
Conclusion

In view of the above amendment and remarks, Applicants respectfully request that all objections and rejections be withdrawn and that a notice of allowance be forthcoming. The Examiner is invited to contact the undersigned representative for Applicants for any reason related to the advancement of this case.

Date: 6/7/05

Heller Ehrman LLP
1717 Rhode Island Avenue, NW
Washington, D.C. 20036
Telephone: (202) 912-2503
Facsimile: (202) 912-2020

Respectfully submitted,



Stephen D. Huang
Attorney for Applicants
Reg. No.: 45,304

Customer No. 26633